

## REMARKS/ARGUMENTS

In view of the amendments to the claims above and the remarks and arguments below, Applicant believes the pending application is in condition for allowance.

### **I. Status of the Claims**

Claims 1, 9, 10, 25, 26, 33, 34, 51, 53, 56, 74-77, 96, and 97 were previously pending.

Claims 2-8, 11-24, 27-32, 35-50, 52, 54, 55, 57-73, and 78-95 were canceled without prejudice to or disclaimer of the subject matter contained therein.

Claims 51, 53, and 74-76 have been withdrawn from consideration.

Claims 1, 9, 25, 26, 33, 56, 77, 96, and 97 are amended in this Response as follows.

Claims 1, 25, 26, and 77 are amended to clarify that the “epoxy group” recited therein is a “three-membered-ring epoxy group.” Support for the amendments can be found in the Specification as originally filed, for example, on page 39, line 21 through the list of chemical formulae presented on page 41. No new matter is introduced by the amendments.

Claim 9 is amended to clarify that it is the copolymer recited in the parent Claim 1 that further comprises a repeating unit derived from a polymerizable unsaturated monomer (“... according to Claim [[1]]1, the copolymer further comprising ...”). Support for the amendment can be found in the Specification as originally filed, for example, on page 7, line 19 through page 8, line 1. No new matter is introduced by the amendment.

Claim 33 is amended to correct grammatical and typographical errors (“further ~~comprisingcomprises~~”, “~~the~~-Formula (I)”; and “~~the~~-Formula (II)”). No new matter is introduced by the amendments.

Claim 56 is amended to clarify that the definition recited applies to all of  $R_{1a}$ ,  $R_{2a}$ , and  $R_{3a}$  (“... wherein each of  $R_{1a}$  [[and]]to  $R_{3a}$  independently represents ...”). Support for the amendment can be found in the Specification as originally filed, for example, on page 76, lines 12-17. No new matter is introduced by the amendment.

Claim 77 is further amended to correct grammatical errors (“the block chain B2 [or C2] has a repeating unit represented by Formula (II) [or (III)] which may be the same as or different from B1 [or C1]”). No new matter is introduced by the amendments.

Claim 96 is amended to correct typographical errors (“~~the~~ Formula (I)”; “~~the~~ Formula (II)”). No new matter is introduced by the amendments.

Claim 97 is amended to correct the erroneous claim dependency originally recited without intent to deceive (“The polymer solid electrolyte according to Claim [[33,]]96,”). Support for the amendment can be found in the Specification as originally filed, for example, on page 17, line 17 through page 18, line 9. No new matter is introduced by the amendment.

Claims 1, 9, 10, 25, 26, 33, 34, 56, 77, 96, and 97 are currently pending and at issue.

## **II. Acknowledgment of Applicant’s Election of Group I**

Applicant appreciatively thanks Examiner Bernshteyn for acknowledging Applicant’s election of Group I (Claims 1, 9, 10, 25, 26, 33, 34, 56, 77, 96, and 97) with traverse for continued prosecution.<sup>1</sup>

## **III. Claim Rejections under 35 U.S.C. § 102(b) over Miwa ‘441**

Claims 1, 9, 10, 25, 26, 33, 34, 96, and 97 are rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Patent Application Publication No. 2002-260441 to Miwa (“Miwa ‘441”). The Examiner states that Miwa ‘441 discloses all the elements recited in those claims. Applicant respectfully traverses the rejections.

Independent Claims 1, 25, and 26 have been amended to clarify that the “epoxy group” recited in the definition of Formula (II) therein is a “three-membered-ring epoxy group” that contains an oxygen atom. On the other hand, Miwa ‘441 only discloses an oxetane group, which is a four-membered ring that contains an oxygen atom.

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<sup>1</sup> Non-Final Office Action dated April 29, 2008, page 2, lines 7-8.

At least for this reason, Miwa '441 does not disclose all the elements recited in Claims 1, 25, and 26. Accordingly, Applicant respectfully submits that Miwa '441 does not anticipate these claims, and respectfully requests that the rejections of Claims 1, 25, and 26 over Miwa '441 be withdrawn.

Claims 9 and 10 depend from Claim 1; Claims 33 and 34 depend from Claim 25; and Claims 96 and 97 (as amended) depend from Claim 26. Therefore, at least for the same reason as stated above with respect to Claims 1, 25, and 26, respectively, Miwa '441 does not disclose all the elements recited in Claims 9, 10, 33, 34, 96, and 97. Accordingly, Applicant respectfully submits that Miwa '441 does not anticipate these claims, and respectfully requests that the rejections of Claims 9, 10, 33, 34, 96, and 97 over Miwa '441 be withdrawn.

Further, Claims 10, 34, and 97 recite that the subject copolymer contains an additional repeating unit that is different from Formula (I) and Formula (II) of the respective parent claims, and which is represented by Formula (III) or Formula (IV). Miwa '441 does not disclose this feature.

For this additional reason, Miwa '441 does not disclose all the elements recited in Claims 10, 34, and 97. Accordingly, Applicant respectfully submits that Miwa '441 does not anticipate these claims, and respectfully requests that the rejections of Claims 10, 34, and 97 over Miwa '441 be withdrawn.

#### **IV. Claim Rejections under 35 U.S.C. § 102(b) over Miwa '226**

Claims 1, 9, 10, 25, 26, 33, 34, 96, and 97 are rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Patent Application Publication No. 2003-045226 to Miwa ("Miwa '226"). The Examiner states that Miwa '226 discloses all the elements recited in those claims. Applicant respectfully traverses the rejections.

Applicant respectfully submits that Miwa '226 does not qualify as prior art under 35 U.S.C. § 102(b). The effective U.S. filing date of the present application is January 23, 2004, the date the

PCT application was filed. On the other hand, Miwa '226 was published on February 14, 2003, which is not "more than one year prior to the date of the [present] application for patent in the United States" as required by 35 U.S.C. § 102(b). Therefore, Applicant respectfully requests that the rejections of Claims 1, 9, 10, 25, 26, 33, 34, 96, and 97 under 35 U.S.C. § 102(b) over Miwa '226 be withdrawn. (Miwa '226, based on its publication date, may qualify as prior art under 35 U.S.C. § 102(a).)

In addition, even if Miwa '226 qualified as prior art under 35 U.S.C. § 102(b) (or under § 102(a)), it would not anticipate Claims 1, 9, 10, 25, 26, 33, 34, 96, and 97 of the present application as explained below.

Independent Claims 1, 25, and 26 have been amended to clarify that the “epoxy group” recited in the definition of Formula (II) therein is a “three-membered-ring epoxy group” that contains an oxygen atom. On the other hand, Miwa ‘226 only discloses an oxetane group, which is a four-membered ring that contains an oxygen atom.

At least for this reason, Miwa '226 does not disclose all the elements recited in Claims 1, 25, and 26. Thus, Applicant respectfully submits that Miwa '226 would not anticipate Claims 1, 25, and 26.

Claims 9 and 10 depend from Claim 1; Claims 33 and 34 depend from Claim 25; and Claims 96 and 97 (as amended) depend from Claim 26. Therefore, at least for the same reason as stated above with respect to Claims 1, 25, and 26, respectively, Miwa '226 does not disclose all the elements recited in Claims 9, 10, 33, 34, 96, and 97. Thus, Applicant respectfully submits that Miwa '226 would not anticipate Claims 9, 10, 33, 34, 96, and 97.

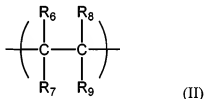
Further, Claims 10, 34, and 97 recite that the subject copolymer contains an additional repeating unit that is different from Formula (I) and Formula (II) of the respective parent claims, and which is represented by Formula (III) or Formula (IV). Miwa '226 does not disclose this feature.

For this additional reason, Miwa '226 does not disclose all the elements recited in Claims 10, 34, and 97. Thus, Applicant respectfully submits that Miwa '226 would not anticipate Claims 10, 34, and 97.

**V. Claim Rejections under 35 U.S.C. § 102(b) over Khan**

Claims 1, 9, 10, 25, 26, 33, 34, 96, and 97 are rejected under 35 U.S.C. § 102(b) as anticipated by a journal article authored by Khan et al.<sup>2</sup> ("Khan"). The Examiner states that Khan discloses all the elements recited in those claims. Applicant respectfully traverses the rejections.

Independent claims 1, 25, and 26 recite a copolymer that contains repeating units represented by Formula (II) below.



Here, "R<sub>9</sub>" represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group." Khan does not disclose such a repeating unit.

At least for this reason, Khan does not disclose all the elements recited in Claims 1, 25, and 26. Accordingly, Applicant respectfully submits that Khan does not anticipate these claims, and respectfully requests that the rejections of Claims 1, 25, and 26 over Khan be withdrawn.

Claims 9 and 10 depend from Claim 1; Claims 33 and 34 depend from Claim 25; and Claims 96 and 97 (as amended) depend from Claim 26. Therefore, at least for the same reason as stated above with respect to Claims 1, 25, and 26, respectively, Khan does not disclose all the elements recited in Claims 9, 10, 33, 34, 96, and 97. Accordingly, Applicant respectfully submits that Khan

<sup>2</sup> Ishrat M. Khan, Daryle Fish, Yadollah Delaviz, and Johannes Smid, "ABA Triblock Comb Copolymers with Oligo(Oxyethylene) Side Chains as Matrix for Ion Transport," *Makromolekular Chemie*, **190**, 1069-78 (1989).

does not anticipate these claims, and respectfully requests that the rejections of Claims 9, 10, 33, 34, 96, and 97 over Khan be withdrawn.

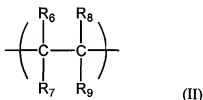
**VI. Claim Rejections under 35 U.S.C. § 103(a)**

Claims 56 and 77 are rejected under 35 U.S.C. § 103(a) as unpatentable over Khan in view of United States Patent No. 5,196,484 to Giles et al. ("Giles"). The Examiner states that Khan in combination with Giles renders the claims obvious. Applicant respectfully traverses the rejections.

Claim 56 recites an "electrode-activating compound" that, together with the recited copolymer, forms an electrode. Examples of such an electrode activator are described in the Specification.<sup>3</sup> Neither Khan nor Giles teaches or suggests this element.

Accordingly, Khan and Giles, either alone or in combination, do not disclose all the elements recited in Claim 56. Applicant respectfully submits that at least for this reason, Khan in combination with Giles does not render the claim obvious, and respectfully requests that the rejection of Claim 56 over Khan in view of Giles be withdrawn.

Claim 77 recites a copolymer that has an arrangement of block chains in an order of B1, C1, A, C2, and B2, in which the block chains B1 and B2 independently have repeating units represented by Formula (II).



<sup>3</sup> Specification, page 83, lines 6-17 ("Electrode activators used in the present invention are not particularly limited and various kinds of compounds known as electrode activators may be used. For example, metals such as lithium metal, silver metal, zinc metal, etc.; alloys such as Li-Al; black lead, carbon black, graphite fluoride, polyacetylene, various carbon materials obtained by baking, thermal decomposition, CVD, etc.; metal oxides such as MnO<sub>2</sub>, CoO<sub>2</sub>, V<sub>2</sub>O<sub>5</sub>, V<sub>2</sub>O<sub>6</sub>, TiO<sub>2</sub>, WO<sub>2</sub>, Cr<sub>2</sub>O<sub>3</sub>, Cr<sub>3</sub>O<sub>4</sub>, CuO, Cu<sub>2</sub>V<sub>2</sub>O<sub>7</sub>, Bi<sub>2</sub>O<sub>3</sub>, Bi<sub>2</sub>Pb<sub>2</sub>O<sub>3</sub>, Mo<sub>4</sub>O<sub>2</sub>, LiCoO<sub>2</sub>, etc.; carcoen compounds such as TiS<sub>2</sub>, TiS<sub>3</sub>, MoS<sub>2</sub>, CuCo<sub>2</sub>S<sub>4</sub>, VSe<sub>2</sub>, NbSe<sub>2</sub>CrS<sub>2</sub>, NbSe<sub>3</sub>, etc.; silver oxyacids such as Ag<sub>2</sub>CrO<sub>4</sub>, Ag<sub>2</sub>MoO<sub>4</sub>, AgIO<sub>3</sub>, Ag<sub>2</sub>P<sub>2</sub>O<sub>7</sub>, etc.; and π-conjugated polymers such as polyaniline, polypyrrol, polythiophen, and poly-p-phenylene, etc., may be mentioned.")

Here, in particular, “R<sub>9</sub> represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group.” Neither Khan nor Giles teaches or suggests this element.

Accordingly, Khan and Giles, either alone or in combination, do not disclose all the elements recited in Claim 77. Applicant respectfully submits that at least for this reason, Khan in combination with Giles does not render the claim obvious, and respectfully requests that the rejection of Claim 77 over Khan in view of Giles be withdrawn.

**CONCLUSION**

In view of the foregoing, it is believed that Claims 1, 9, 10, 25, 26, 33, 34, 56, 77, 96, and 97 are in immediate condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Dated: July 28, 2008

Respectfully submitted,

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